In the Specification

On page 4, amend paragraph 11 as follows:

[0011] The present invention is directed to a data reader such as a barcode scanner wherein the scan pattern generating optics employed are optimized for different modes of operation. In a preferred embodiment, different patterns are projected from different apertures in the scanner housing, one scan pattern optimized for handheld operation and the other optimized for fixed operation. Alternately or in addition other features besides the scan pattern may be optimized for fixed and handheld modes. These features include, among others, the presence or absence of an aiming beam, which may be generated from the same laser source as the scan pattern (a preferred embodiment) or from another source, and enabling or disabling decoding of the signal received ~~signal~~ during a portion of a facet wheel rotation. In a preferred embodiment, decoding is disabled while the scan line(s) for handheld use is generated unless a switch or trigger is actuated. Alternately first one scan pattern is not generated when the scanner is in the second mode of operation.

On page 4, amend paragraph 0012 as follows:

[0012] In one preferred embodiment ~~of the present invention~~, a single set of pattern generating optics is employed to simultaneously project a plurality of scan patterns, one scan pattern optimized for fixed ~~and~~ performance and one scan pattern optimized for portable performance. In another embodiment, a single set of pattern generating optics is switched between a scan pattern optimized for fixed mode reading and a scan pattern optimized for portable mode reading. In one preferred embodiment, separate and distinct scan pattern generating optics are employed, thereby allowing

independent optimization of the performance characteristics of the barcode scanner for each mode of operation.

On page 5, amend paragraph 0013 as follows:

[0013] A barcode scanner of one or more of the preferred embodiments may offer ~~incorporating the present invention offers~~ the advantage of flexibility for the end user, in that one device can be used in multiple modes of operation without suffering from inferior performance characteristics of previously available fixed/portable barcode scanners. The device described herein exhibits performance characteristics in each mode of operation comparable to those of barcode scanners designed for only one mode of operation or the other. The multiple aperture embodiment may also minimize the manipulation of the scanner required for a user to aim the scanner when the scanner is in portable mode and allowing the user to easily return the scanner to fixed mode.

On page 5, amend paragraph 0014 as follows:

[0014] Additional aspects and advantages ~~of this invention~~ will be apparent from the following detailed description of preferred embodiments, which proceeds with reference to the accompanying drawings.

On page 7, amend paragraph 0038 as follows:

[0038] When the portable mode of operation is desired, the operator may lift barcode scanner 100 from the base unit 105. The scan pattern 110 produced from scan lines passing through the second window 108 is optimized for portable operation. In portable mode operation, the operator aims the barcode scanner 100 to orient the ~~place~~ plane of the scan pattern across the barcode. The portable mode scan pattern 110 preferably comprises a pattern of one or a few scan lines (e.g. two or

three parallel or slightly overlapping scan lines) with a longer depth of field and smaller angular field of view relative to fixed mode scan pattern 106. The handheld mode scan pattern 110 permits the user to aim the scan pattern onto a particular bar code, such as one bar code out of several located on an object, reading only a single bar code as desired.

On page 9, amend paragraph 0044 as follows:

[0044] Similarly the steering mirror 204 may be omitted with one mirror facet (or multiple mirror facets) directing ~~a~~ scanning beams across pattern mirrors 206 and for producing scan lines 106 out window 104. The scan line(s) directed out of window 104 may be optimized for fixed mode scanning operation relative scan pattern geometry and density as well as to depth of field and focal distance.

On page 11, amend paragraph 0057 as follows:

[0057] Any of these methods may be activated manually by the operator, or may be activated automatically as the barcode scanner is picked up and replaced on the base unit 105 ~~104~~. For automatic operation, the scanner 100 may be equipped with a motion sensor 230 which senses that the unit has been picked up by the operator. When the sensor 230 detects motion, the scanner is switched to the handheld mode of operation with the first scan pattern 110 being projected through the scan window 108. When the scanner 100 is returned to the base unit 105, and the sensor 230 senses that the scanner is no longer in motion, the scanner 100 is then switched to the fixed mode of operation for scanning with the second scan pattern 106 being projected into the second scan volume in front of the scan window 104.

On page 13, amend paragraph 0064 as follows:

[0064] One preferred aiming beam generation system is illustrated in Figs. 11-12 wherein the rotating facet wheel 250 includes four scanning facets 252, 254, 256, 258 with one or more corners 260 of the facet wheel 250 being cut out ~~cutout~~ to form two small facets 262, 264 arranged perpendicularly to one another. As the facet wheel 250 is rotated, the reading beam 251 impinging on the facets 252, 254, 256, 258 produces scanning beams as the beams are directed across the pattern mirrors as described above with respect to Figs. 1 and 2. As the beam 251 strikes the corner facets 262, 264 the beam tends ~~not~~ to scan more slowly, that is the outgoing beam 261 is directed along ~~the same~~ parallel paths for the time it takes the reading beam 251 to traverse both corner facets 262, 264. The beam reflected by the corner facets 262, 264 tends to generate a higher brightness forming a more visible ~~spot~~ line segment or aiming beam.

On page 13, amend paragraph 0065 as follows:

[0065] In one aiming beam configuration, the mirror facet 508 is angled to produce the portable mode scan line 110 passing through the upper window 108. Corners 260, 270 on opposite sides of the facet 252 include corner facets 262, 264 and 271, 272. Each of the corner mirror pairs 262 & 264 and 271 & 272 ~~each~~ produces an aiming ~~spot~~ line segment (per rotation), for example one aiming ~~spot~~ line segment formed on each end of the scan line 110 produced by facet 508. The aiming ~~spots~~ line segments may be formed or allowed to exit only in conjunction with the scanning ~~beam~~ line 110 in keeping with the various embodiments described herein.

On page 14, amend paragraph 0067 as follows:

[0067] The reading beam 251 generated by a light source such as a laser diode 255, is directed by a fold mirror 273 onto the facet wheel 250 striking either of the facets of the corner cube 260 which may be angled with respect to the facet wheel axis 290 so that the reflected beam 261 is directed at mirror 268, and then is reflected out scan window 108, forming a substantially ~~stationary spot~~ brighter line segment or aiming beam. In alternative embodiments mirror 268 may be eliminated. Mirror 204, as described earlier with respect to Fig. 2, alternately directs the reading beam 251 for generating the first scan pattern 106 comprised of one or more scan lines.

On page 16, amend paragraph 0076 as follows:

[0076] Fig. 8 illustrates yet another alternate embodiment for a scanner 400 having a first window 404 on the front face thereof, through which scan lines 406 generate a scan pattern into the scan volume C for the fixed mode. Housing 402 includes a bottom portion 401 on which the second window 408 is located. The second window 408 is positioned between the bottom surface and the front face which would direct a scan pattern 410 generally downwardly and forwardly from the second window 408. Since the scanner 400 would normally be placed in a holder during the fixed mode, the operator may more readily grasp the top portion 403 of the scanner, and ~~in~~ locating the second window 408 on the bottom facilitates convenient use of the scanning beams 410 for the handheld mode of operation. Moreover, depending upon the design of the scanner holder (examples of which have been described in previous embodiments), when the scanner 400 is in its holder, the second window 408 may be covered, thereby blocking scan lines from exiting during the fixed mode.

On page 17, amend paragraph 0082 as follows:

[0082] The base unit 506 contains a swivel 520 which may allow for orientation of the scanner 500 when mounted in base unit 506 ~~505~~, which may be particularly useful during the fixed mode of operation, in order to adjust the orientation of first window 508 and thereby adjust the location of scan volume C. The scanner 500 preferably has a low center of gravity providing stability even when tilted at a wide range of angles when resting in the base unit 506, which may be facilitated by placing heavier internal components and/or weights in the bottom portion 504.

On page 19, amend paragraph 0087 as follows:

[0087] The scan pattern which is projected through scan window 508 may have characteristics which increase first pass read rates for two types of fixed scanner use: presentation mode (wherein a barcoded object is brought toward the scanner in a path substantially perpendicular to the scanner window) and sweep mode (wherein a barcoded object is moved past the scanner window in a path substantially parallel to the scanner window). The scan pattern 512 generated by the embodiment illustrated in Figs. 16-17 is depicted in Fig. 18, shown at the scan window 508. As illustrated, the pattern comprises a number of lines at a wide range of orientations (their angle and location relative to each other) which are projected at a small angle from perpendicular to scan window 508, crossing relatively far from scan window 508, which increases first pass read rates when objects with barcodes thereon are presented to scan window 508, ~~preferably~~ when the scanner 500 is mounted in the base unit 506. Vertical scan lines are in two groups, the lines 570a, 570b produced by inner pattern mirrors 580, 581 respectively, and the lines 572a, 572b are produced by outer-pattern mirrors 582 583, respectively. The

lines ~~582~~572 are projected at a relatively large angle from perpendicular to the scan window 508, crossing relatively close to the scan window 508, which increases first pass read rate when objects with barcodes thereon are swept ~~pass~~ past the scan window 508.

On page 19-20, amend paragraph 0088 as follows:

[0088] In this embodiment the split pattern mirror~~s~~ pair 580, 582 and ~~582~~ pair 581, 583 are producing substantially vertical scan lines 570a, 570b, and 572a, 572b, respectively and mirror 566 projects scan lines 578 at different angles in a substantially horizontal plane, which may not increase the number of scan lines but may increase the number of orientations (angle and/or location) of the scan lines. The intermediate mirror 564 produces four angled scan lines 573, 574 (one for each primary facet of the wheel 558) while intermediate mirror 565 produces four angled scan lines 575, 576. Alternative embodiments may split different pattern mirrors and/or different sets of pattern mirrors.

On page 20-21, amend paragraph 0092 as follows:

[0092] There are a number of scanner functions which relate to facet wheel rotation/location for which it may be useful to control operation according to whether the scanner is in fixed or handheld operation. These functions may include scan pattern generation, aiming beam function, and decoding. In order to control operation of these functions, a signal which is synchronized to the facet wheel rotation, herein referred to as an electrical glitch, may be generated. This electrical glitch may be used to control timers which enable and disable various functions during a certain portion of a revolution. In the embodiment depicted in Figs 16-18, for example, generation of an aiming beam, which is preferably in handheld operation,

by a corner cube 590 may be disabled unless a switch or trigger is actuated. This disabling is accomplished by turning off the laser diode whenever the scanning beam 556 would strike ~~a~~ the corner cube 590, which happens during a fixed portion of each revolution of facet wheel 558.

On page 22, amend paragraph 0095 as follows:

[0095] Alternatively, the optical glitch mirror may not be on the facet wheel, but at any position within the scanner toward which the scanning beam is reflected by the facet wheel once per revolution, such as corner cube 590. ~~However, this~~ The optical glitch may be located on a pattern mirror, between pattern mirrors, or where a pattern mirror directs the beam. At any one of these locations, the detector may be placed, or a mirror or a functional equivalent may be placed ~~which~~ so as to direct ~~directs~~ the glitch beam, either directly or after one or more reflections, to a detector. Another alternative to the optical glitch mirror on the facet wheel is simply a hole through the facet wheel, through which the reading beam may proceed toward the detector, either directly or after one or more reflections.

On page 24, amend paragraph 0103 as follows:

[0103] Alternatively, ~~shutting~~ the light source may be shut off during a portion of a facet mirror rotation if necessary. Alternatively, micro mirrors or acousto-optic means could be used to redirect the scanning beam to achieve performance discussed above.

On page 24, amend paragraph 0105 as follows:

[0105] The pedestal ~~700~~ 720 may house much of the electronics. The head portion 710 may contain the scan engine for generating scan patterns for both fixed and handheld use,

as well as a wireless connection to the pedestal 720. The head portion 710 may also include indentations 716 on its sides to readily enable grasping. The head portion 710 may rest on the pedestal 720 in nearly any orientation, and may be secured in a particular orientation by hook and loop fabric or other suitable mechanical or magnetically releasable retention mechanism. The pedestal portion 720 may include or be supported by a base portion 722 with electrical connection to the host or terminal provided by a suitable cable 724 or wireless connection.

On page 25, amend paragraph 0107 as follows:

[0107] The relative configuration of windows 802 and 806 may be changed by employing mirrors. This may allow many of the configurations described herein which employ a flying spot means to be used with the imaging array of Fig. 21. An alternative embodiment may enable or disable one or the other of the optical paths, depending on the mode of operation. This enabling/disabling may be accomplished with a mechanical shutter or with an LCD shutter as described herein. Rather than a shutter and a lens for each mode of operation, a single lens may be used and simply moved from the position of lens 808 to the position of lens 804. This would effectively disable one mode when the other mode is operational. Illumination may be provided by the data capture device, which may be especially useful for handheld operation. Typically, a sheet of light generated by a laser is used for illumination in a Sheimpflug arrangement, and this illumination may also function as an aiming beam. Other specific arrangements for an imaging array mechanism are disclosed in allowed U.S. application Ser. No. 08/363,258, Patent No. 5,770,847, which is herein incorporated by reference.